

(c) Remarks:

The claims are 10-15 with claim 10 the sole independent claim. New independent claim 10 is equivalent to former claim 5 rewritten in independent form and amended to resolve an informality with the term “electrodes.” New dependent claims 11-13 correspond to former claims 7-9. New dependent claim 14 includes the subject matter of Fig. 12 for compound examples 1-8 but excludes compound examples 9 and 10. New claim 15 incorporates the subject matter of the structure shown in Fig. 13. Consideration of the claims is expressly requested.

Claims 1-5 and 7-9 were rejected under Rule 112, second paragraph as being indefinite. The objections to claims 1, and 3-5 has been obviated by the cancellation of such claims.

Former claims 7 and 8, now rewritten as new claims 11 and 12 recite that the metal coordination compound has the indicated light-emission lifetime. In new claim 10 the term “electrodes” appears rather than the term “electrode” to which objection was made.

The anticipation rejections under 102(b) or 102(e) as anticipated by JP ‘288 or Brunner ‘830 had been obviated by the incorporation of the subject matter of claim 5 into claim 1. Claim 5 was not subject to an art rejection based on anticipation.

Former claims 1-9 were rejected as obvious over Brunner ‘830 on the grounds that with regard to the partial structure represented by general formula (4), such compounds are said to be encompassed by the art wherein the chelating moiety of the formula in paragraph [0006] is substituted by a substituent disclosed in paragraph [00011]. Absent a showing of superior unexpected results commensurate in scope with the claimed subject matter, the Examiner argues

it would have been within the level of the artisan to determine suitable and optimum substituents. The grounds of rejection are respectfully traversed.

In the present claimed invention the metal coordination compound has a partial structure which is a 2,9-substituted phenanthroline. As noted on specification page 20, lines 10-23, such 2,9-substitution on the phenanthroline maintains the pseudo-tetrahedral structure both in the ground state and, additionally, in the excited state, to provide high light-emission luminance. Even when in an excited state, the phenanthrolines are liable to take a single planar configuration. However, the presence of the 2,9-substituents serves to maintain the pseudo-tetrahedral structure. The specification also notes that compound examples 3-8 shown in Fig. 12 and as claimed in claim 14 also exhibit high-luminence light-emission characteristics on the basis of the same theory. Moreover, in Examples 1-6, compound example numbers 1, 4 and 8 having the 2,9-phenanthroline structure were employed. The tests show unexpectedly superior results.

Support for new claim 15 is found on page 22, line 23 to page 23, line 1. The copper coordination compound of Fig. 13, when incorporated into a polymer chain, makes the portion effectively function as a light-emitting moiety.

Accordingly, the specification shows that superior light-emission luminance is obtained by the 2,9-substituted phenanthrolines. The working examples show that each tested 2,9-substituted phenanthroline provided superior results. According to MPEP § 2144.08 on page 2100-150, Office personnel should consider all rebuttal arguments in evidence presented by applicants and specifically notes that *In re Soni* 34 USPQ 2d 1684, provides that it is error not to

consider evidence presented in the specification. Accordingly, a showing of unexpected results in the specification is entitled to probative weight when assessing unexpected results.

Brunner '830 fails to teach or suggest a 2,9-substituted-phenanthroline structure. Brunner is primarily directed to an invention in which the complex employs ruthenium. Copper is merely described as a possible alternative, but is neither preferred nor exemplified. Ruthenium and zinc are preferred.

Brunner teaches nothing of the importance of employing 2,9-substituted phenanthrolines. Indeed, the phenanthrolines illustrated in Brunner paragraphs [0006] and in Brunner claim 2 are merely unsubstituted phenanthrolines. Brunner teaches nothing of the need to provide a pseudo-tetrahedral structure to enhance high luminence light-emission characteristics.

Further, applicants have disclosed on specification page 20, lines 24-26 that copper complexes, when compared to other commonly used light-emitting materials, show very strong light emission in a solid state and a film-shaped light-emitting device. See page 21, lines 1-26.

Accordingly, applicants have demonstrated that superior results are obtained for the 2,9-substituted phenanthrolines and also for the presence of a copper complex, as compared to other commonly employed metals. None of these features is disclosed or suggested by Brunner. Applicants have stated for the record that superior results are present for the 2,9-substituted phenanthrolines and their actual Examples confirmed these statements.

Accordingly, the record is clear that Brunner neither discloses nor suggests the key features of the instant claimed invention nor their advantages. Accordingly, the claims should be allowed and the case passed to issue.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address given below.

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